SAMPLING

IN THIS APPENDIX

OVERVIEW

This Appendix provides minimum sampling standards to assist the examiner in selecting a universe of loans to review for compliance with applicable consumer protection regulations and the technical requirements of the fair lending laws and regulations. Sampling guidelines for conducting comparative loan file analysis is presented in Part III:H3 of this manual.

TYPES OF SAMPLING

Judgmental Sampling

In judgmental sampling, a selection of elements drawn from the population of interest is based on a view of the individual making the decision. This sampling method involves an in-depth analysis of only a portion of a group. Therefore, each item in the group (the universe) does not have an equal chance of being selected.

Statistical Sampling

Statistical sampling enables the examiner to extend the conclusions drawn about a small portion of a group of items to the entire group of items. In order for this type of sample to be valid, the entire universe must have similar characteristics and each item must have an equal chance of being selected.

SAMPLING   Historically, judgmental sampling has been used more frequently than statistical
               sampling. However, until new sampling procedures are developed and tested,
               either method is acceptable. Regardless of the type of sampling method selected,
               when determining the sample size at any financial institution, examiners should
               consider, at a minimum: the loan products reviewed at the previous examination
               and deficiencies noted, the variety of loan products offered, the volume of loan
               originations, and new products offered since the previous examination.

               In determining the transaction types to be sampled, the following characteristics,
               which are not necessarily all-inclusive, should also be considered:

                   Maturity
                   --   Closed-End (time and demand loans)
                   --   Open-End (credit cards, home equity lines of credit)

                   Collateral
                   --   Automobile (direct and indirect)
                   --   Real estate (home improvement, residential mortgage, construction)
                   --   Unsecured

                   Repayment Terms
                   --   Demand
                   --   Single payment
                   --   Installment (monthly, quarterly, annual, balloon payment, long- and
                        short-odd days to the first payment)

                   Insurance
                   --   Credit life, accident, and health insurance
                   --   Property insurance
                   --   Vendors' single interest insurance
                   --   Mortgage insurance

                   Finance Charges
                   --   Simple interest
                   --   Add-on or discount interest
                   --   360/365-day method

                   Prepaid Finance Charges
                   --   Real estate points
                   --   Origination fees
                   --   Documentation fees

                   Variable-Rate Feature
                   --   Regular
                   --   Discounted

               It should be noted that a particular loan may exhibit several of the aforementioned

**SAMPLING
(cont'd)**

characteristics, all of which may be reviewed at the same time. Loans selected for review should be limited to those originated since the date of the previous examination. However, examiners may wish to initially focus on the prior six months.

Examiners should select loans from the financial institution's automated download of the loan portfolio or a loan trial balance, as opposed to specifically requesting loan files from bank management. However, some types of transactions may not be easily identifiable, such as loans with flood insurance or co-signer loans. In these instances, it would be appropriate to request the particular loan type desired without specifying individual files.

In a judgmental sample, the examiner may wish to review a few of each type of loan transaction. The sample size will vary and should be expanded to a level where the examiner is satisfied, after investigating the apparent cause or source of the violations, that a pattern or practice of such violations either does or does not exist.

Statistical sampling is another method which may be used. For example, when numerous, seemingly unrelated violations are noted, the examiner may wish to obtain a statistical sample to determine the probable extent of such violations throughout a loan portfolio. A volume of such violations sufficient to indicate a breakdown in established procedures could be considered a pattern or practice warranting reimbursement.

For a random sample, the examiner should select for review 25 loans consummated since the date of the previous examination or within two years, whichever period is shorter.

The universe of loans sampled, determined in any reasonable and expedient manner, should be divided by 25 to arrive at the interval between loans to be selected for review. Every "nth" loan in the universe should then be selected based on the interval determined, after commencing with the initial loan chosen at random within the first interval.

Randomness in selecting the first loan can be assured, for example, by taking the last five digits from the serial number appearing on any dollar bill and, as a decimal, multiplying this random fraction, by the interval previously determined to arrive at the number of the first loan to be selected. All fractional numbers should be rounded up to the next whole number. In the event a particular loan is a commercial loan or a consumer loan consummated prior to the selection period, the examiner should go to the next succeeding loan, as necessary, until an appropriate loan is selected. The interval count, however, should resume from the first inappropriate loan selected.

SAMPLE DOCUMENTA-TION

Since the presence of "a clear and consistent pattern or practice" is a prerequisite to most findings of a reimbursable Truth In Lending violation (Section 108(e)(2) of the Act), it is vital for the examiner to document the results of the examination sample. This information may be particularly important if a financial institution requests relief from reimbursement following an examination. Therefore, the examiner must provide clear, accurate, and complete information about the sample and its results.

Truth in Lending Reimbursable Violations

For each type of reimbursable Truth in Lending violation, the examiner shall provide the following information about the sample(s) drawn and the results:

Type of loan involved (for example, residential mortgages)
Special characteristics (for example, mortgages with credit life insurance)
Number of loans sampled containing the special characteristics
Number of loans with reimbursable violations

Since the institution's entire lending activity of a given type is potentially subject to Truth In Lending reimbursement, it is important to place the impact of reimbursement in perspective.

The examiner must provide a best estimate of:

The number of loans, of the specific type/characteristics, made by the bank during the adjustment period (see "Corrective Action Period" below), and:
--   Currently outstanding
--   Paid off

The universe subject to reimbursement

This should be in terms of both the number of loans and the estimated amount of reimbursement. A brief explanation of how these estimates were determined should also be given.

When credit insurance premiums have not been included in calculations for APR and finance charge disclosures, information must be provided concerning the "penetration rate". The examiner would provide the percentage of loans which have the credit insurance coverage for each specific loan type/characteristics involved. The "penetration rate" provides a further indicator for evaluating the presence of a pattern or practice.

Similar documentation would be required for violations of other consumer protection laws and regulations.

NOTE: Please refer to the Fair Lending section of this manual, for guidance on sampling procedures for reviewing Fair Housing.

CRA

**Interim Guidance
for Sampling at
Small Institutions**

Examiners will need to estimate three proportions in connection with CRA examinations of small institutions:

> Loans inside and outside of an assessment area

> Loans in low, moderate, middle, and upper income geographies in an assessment area

> Loans to low, moderate, middle, and upper income borrowers within an assessment area

Examiners should interpret the estimated proportions based on the performance context and other information obtained during the examination.

Under the revised regulation, small institutions are not required to collect data for CRA examination purposes. However, some small institutions may choose to provide data regarding their loans, including the census tract locations and borrower incomes, similar to the data requirement for large institutions.

Some institutions may even provide a summary of their distribution of loans. In this case, if the examiner is able to verify the institution's information, the examiner may use the data supplied by the institution and will not need to perform sampling to evaluate the institution's CRA performance.

Sampling at Small Institutions

1. Determine one or more major product lines from which to select a sample, taking into account factors such as the institution's business strategy and its areas of expertise.

    As an initial matter, examiners may select for review for these purposes among the same categories of loans that are to be used when reviewing large institutions, for example, mortgages, small business and farm loans, and consumer loans.

    NOTE: The major consumer product categories are defined in the CRA regulation as home equity, motor vehicle, other secured, unsecured and credit card.

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2. Determine the universe of loans for each category.

    NOTE: The total number of loans, both originated and purchased by the institution, for a major product category, will be defined as the "universe" of loans.

CRA (cont'd)

Interim Guidance for Sampling at Small Institutions (cont'd)

In order to determine the number of loans for the sample (known as the sample size), examiners should know the number of loans in the universe, even if this requires them to count the number of loans manually.

This universe can include any of the following:

> Total number of loans since the previous examination
> Total number of loans in the previous year
> Total number of loans in the previous six months

At a minimum, the universe of loans should cover at least the activity in the six months prior to the examination. It should cover at least the prior year if the number of loans made in the last six months is less than 50. If the universe of loans for the previous year for any particular product category is less than 50, then **all** loans made or purchased since the previous examination for that product should be included in the universe.

3. Determine the number of loans to be sampled.

    Use the table included at the end of this Appendix to determine the appropriate number of loans to be selected for each product category being examined. The table indicates the sample size based on the universe of loans for each product and the desired confidence and precision levels.

    Initially examiners should select samples based on a 90% or 95% confidence interval, with a plus or minus 10% level of precision. This means that there is a 90% or 95% chance that the results from the sample will be within 10% of the true proportion, for whichever criteria is being evaluated.

    NOTE: Generally, using the 10% level of precision will be sufficient; however, in circumstances in which a large number of loans are missing income, examiners may wish to use the 5% level of precision so that there is a sufficient number of loans to analyze.

    For loan products or institutions that require further investigation or are undergoing greater scrutiny for any reason, a larger sample may be necessary because examiners may need results with a higher degree of reliability. Examiners may use the 90% or 95% confidence level with a plus or minus 5% precision level from the table at the end of this Appendix for guidance when a larger sample is necessary.

CRA (cont'd)

**Interim Guidance
for Sampling at
Small Institutions
(cont'd)**

The CRA sampling software, distributed in December 1996, will calculate the sample size for any universe at either a 90% or 95% confidence interval and at a 5% or 10% precision level. Examiners should use their judgment to determine which sample size to use based on the initial scoping of the examination and subsequent findings on site.

How to Select a Random Sample

Once the number of loans to be sampled is determined, the examiner should select these loans from a list of loans unique to that product, if one is available from the institution.

If no unique list or other sorting system is available, the examiner should restrict the random sampling procedures below to each product category that can be segregated.

1.   To select files, calculate the interval to use for sampling by dividing the number of loans in the universe by the number of loans that will be in the sample and rounding up to the nearest whole number.

Information to be Gathered for Each Loan Record

1.   Once the loans for each sample have been identified, record relevant loan information into a spreadsheet.

Data for each loan should include, at a minimum:

Institution's internal loan ID number

Loan type

Loan dollar amount

Location – in cases where the census tract of the loan is not readily available, examiners are expected to geocode the loans (see instructions below)

For the home related and consumer loans sampled, the borrower income that was used to approve the loan

For the small business and small farm loans sampled, the business or farm's revenue

2.   When data are missing, attempt to obtain this information through discussions with institution representatives.

CRA (cont'd)

**Interim Guidance
for Sampling at
Small Institutions
(cont'd)**

Obtaining information through these discussions can significantly reduce the amount of records in the sample with "missing data" and thereby increase the validity of each sample.

NOTE: Pilot testing of these procedures revealed that missing data can be a serious problem. Specifically, experience shows that a large number of small business or small farm loans may use P.O. Box addresses instead of street addresses and that consumer loan files may not include borrower income information.

Geocoding Loan Locations

1. If the institution has not already geocoded each loan, by determining the Metropolitan Statistical Area (MSA) (if applicable), state, county, and census tract or Block Numbering Area (BNA), the examiners will need to determine this for the loans in the sample.

Calculating Proportion Estimates

1. Calculate the proportion estimates as itemized in the examination procedures.

    NOTE: The CRA sampling software will calculate these proportions, otherwise examiners may calculate these proportions manually.

Comparisons of Credit Extended Inside and Outside of the Assessment Area(s)

2. Tabulate the following proportions:

    Percentage of the number of loans (by product type) inside and outside the assessment area(s)

    Percentage of the dollar amount of loans (by product type) inside and outside the assessment area(s)

Distribution of Credit within the Assessment Area(s)

3. In accordance with the examination procedures, examiners should tabulate the following proportions based on **only those loan records from the sample that are within the assessment area(s)** for each product category:

    Number and percentage of loan originations (by product type, if applicable) in low, moderate, middle, and upper income geographies

CRA (cont'd)

Interim Guidance for Sampling at Small Institutions (cont'd)

Dollar amount and percentage of loan originations (by product type, if applicable) in low, moderate, middle, and upper income geographies

Number and percentage of loan originations (by product type, if applicable) to low, moderate, middle, and upper income borrowers

Dollar amount and percentage of loan originations (by product type, if applicable) to low, moderate, middle, and upper income borrowers

Number and percentage of loan originations to small businesses/farms of different sizes (by revenue)

Dollar amount and percentage of loan originations to small businesses/farms of different sizes (by revenue)

Examiners should follow the guidelines in the CRA examination procedures for analyzing the results from the sampling and, ultimately, assigning a rating to the institution's lending performance.

SAMPLE SIZE TABLE

Sample Size Table		
Half Width of Confidence Interval +/– **10%** Precision		
No. of Originations and Purchases	Sample Size	
	95%	90%
10	8	8
50	29	25
100	41	33
200	52	40
300	58	43
400	61	45
500	62	46
600	64	46
700	65	47
800	66	47
900	66	48
1,000	67	48
1,250	68	48
1,500	68	49
1,750	69	49
2,000	69	49
2,250	69	49
2,500	70	49
2,750	70	49
3,000	70	49
3,500	70	50
4,000	70	50
4,500	70	50
5,000	71	50

**SAMPLE SIZE
TABLE
(cont'd)**

Sample Size Table		
Half Width of Confidence Interval +/– **5%** Precision		
No. of Originations and Purchases	Sample Size	
	95%	90%
10	10	10
50	43	40
100	74	67
200	118	101
300	147	121
400	167	135
500	183	144
600	195	152
700	204	157
800	212	162
900	218	166
1,000	224	169
1,250	234	175
1,500	242	179
1,750	247	182
2,000	252	184
2,250	255	186
2,500	258	188
2,750	261	189
3,000	263	190
3,500	266	192
4,000	269	193
4,500	271	194
5,000	272	195

FDIC LAW, REGULATIONS, & RELATED ACTS

Applicable Rules   None

Advisory Opinions   None

Statements of Policy   None

DCA MEMORANDA   None

FINANCIAL INSTITUTION LETTERS (FIL)   None

OTHER   FFIEC Interim Guidance for Sampling at Small Institutions, "Red Book", Tab M